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## IMPROVING ACCESS TO CARE FOR CHILDREN WITH MENTAL DISORDERS: A GLOBAL PERSPECTIVE

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### Abstract

Developmental disabilities, emotional disorders, and disruptive behaviour disorders are the leading mental health related causes of the global burden of disease in children aged below ten years. This article aims to address the treatment gap for child mental disorders through synthesizing three bodies of evidence: the global evidence base on the treatment of these priority disorders; the barriers to implementation of this knowledge; and the innovative approaches taken to address these barriers and improve access to care. Our focus is on low resource settings, which are mostly found in low and middle income countries (LMIC). Despite the evidence base on the burden of child mental disorders and their long-term consequences, and the recent mhGAP guidelines which testify to the effectiveness of a range of pharmacological and psychosocial interventions for these disorders, the vast majority of children in LMIC do not have access to these interventions. We identify three major barriers to implementation of efficacious treatments: the lack of evidence on delivery of the treatments; the low levels of detection of child mental disorders; and the shortage of skilled child mental health professionals. The evidence base on implementation, although weak, supports the use of screening measures for detection of probable disorders, coupled with a second stage diagnostic assessment, and the use of non-specialist workers in community and school settings for the delivery of psychosocial interventions. The most viable strategy to address the treatment gap is through empowerment of existing human resources who are most intimately concerned with child care, including parents, through innovative technologies such as mobile health, with the necessary skills for the detection and treatment of child mental disorders.

### Introduction

Developmental disabilities (such as intellectual disability and autism), emotional disorders (notably anxiety and depression), and disruptive behaviour disorders (notably conduct disorder and ADHD) are the leading mental health related causes of the global burden of disease in children aged below ten years<sup>1</sup>. These disorders were also identified by global leaders in psychiatry as priorities for child mental health service development<sup>2</sup>. This paper

addresses improving access to care for these disorders. Our focus is on low resource settings, which are mostly found in low and middle income countries (LMIC). These are not only settings where resources are scarce, but where the probability of extreme hardships which can enhance vulnerability to develop mental disorders is greater. In particular, millions of children in LMIC live in circumstances of extreme poverty, low birth weight and under-nutrition, high burden of communicable diseases, lack of early childhood stimulation, humanitarian crises and lack of access to education. The large resource gap for child mental disorders, arguably even larger than the widely recognized gap for adult mental disorders, is mirrored in the evidence gap<sup>3</sup>. The vast majority of research on child and adolescent mental health comes from high-income countries. For example, among items on child and adolescent mental health indexed in the Web of Science database over the last decade, about 90% had an authorship from a high-income country. Authorship from upper middle-, lower-middle- and low-income countries occurred in 7.79%, 1.19% and 0.33% of the items, respectively. This contrasts starkly with the global population of children and adolescents in the world-over 90% live in LMIC. Although this scenario is progressively changing, with proportion of authorships from leading LMIC rising (Turkey, +136%; China, +108%; and Brazil, +86%), this has to be contextualized in regard to the small current scientific output of such countries (together less than 5% of the global production)<sup>4</sup>. Thus, little is known about child mental disorders-their epidemiology, phenotypes, aetiology or treatment-from LMIC<sup>5</sup>. With these caveats in mind, we have reviewed the available evidence to address our primary goals through three objectives: the global evidence base on the treatment of the priority disorders; the barriers to implementation of this knowledge; and the innovative approaches taken to address these barriers and improve access to care.

## The evidence base on the treatment of child mental disorders

Interventions to reduce the burden of mental disorders in children typically include a range of promotive, preventive and treatment strategies. While the former usually refer to interventions aiming to avoid the incidence of a disorder, the latter are directed to established disorders. This paper focuses on treatments for established disorders. A sound basis to consider the evidence base is the WHO's mhGAP intervention guidelines, which were published in 2010<sup>6</sup>. The background and methodology used to develop these guidelines have been published elsewhere<sup>7, 8</sup>. In summary, these guidelines are the result of the most systematic exercise to sift through and grade the global evidence on the treatment of a range of mental, neurological and substance use disorders with a focus on their delivery in non-specialized health care settings (where most care for child mental disorders will take place in LMIC). The guide clearly states that though it advises the clinician on 'what to do', it does not elaborate 'how to do' it. The guide is divided into a modular format with each major disorder assigned a module. Each module comprises two algorithms; the first algorithm is for initial assessment and management of the individual and involves specific decision making steps which lead to the first line management of the problem; this is followed by the intervention algorithm which addresses follow up, referral guidelines and details on specific interventions. All recommendations are provided with a label of strength of either 'strong' or 'standard'. A 'strong' recommendation implies that the Guideline Development Group was confident that the intervention suggested was the best possible course of action and easily adaptable to most settings. A 'standard' recommendation is one where the intervention was suggested as a course of action that could be offered for a majority of patients. Of the eight groups of disorders in the guide, three have particular relevance to the priority child mental disorders being addressed in this paper: Developmental, Behavioural Disorders and Depression. Table 1 summarizes the recommendations for these key child mental disorders. The two developmental disorders addressed are Intellectual Disability and Pervasive Developmental Disorders. The Behavioural Disorders module deals with Attention Deficit Hyperactivity Disorder

specifically with a general approach to other behavioural disorders. Finally, the module on Depression, while primarily targeted to adults, also deals with somatoform disorders and depressive symptoms in children and adolescents. An additional module which is of relevance to child mental health is Epilepsy, but this is not included in this paper. The only recommendation related to anxiety disorders is a negative one, i.e. for non-specialist workers not to use pharmacological interventions.

## **The treatment gap for child mental disorders and barriers to improving access**

Despite the high prevalence and significant associated burden, and the evidence base to guide treatment decisions in LMIC, there is an enormous gap in the provision of treatment for mental disorders in children<sup>5</sup>. While there are no accurate population based estimates of the treatment gap, a recent survey in 42 LMIC that used the WHO Assessment Instrument for Mental Health Systems estimated that children and adolescents make up only 12% of the patient population in mental health outpatient facilities and less than 6% in all other types of mental health facilities<sup>9</sup>. These data point to a potentially very large treatment gap (given that the gaps for adults exceed 50% in all LMIC, and approach 90% in some). We consider three critically important barriers to addressing this treatment gap which can be potentially addressed through research and service development.

The first barrier is the relative lack of existing evidence to inform the delivery of evidence based treatments in LMIC. The iniquity in the global distribution of research on child mental disorders alluded to earlier is even greater when we consider the evidence base on treatment and health services research. The evidence base for treatment guidelines which lie at the heart of mhGAP and other guidelines come mostly from high-income countries: among the 670 randomized clinical trials indexed in PubMed/Medline between 2000 and 2010 focusing on interventions for selected mental health problems in children and adolescents, only 58 came from middle-income countries and only one from a low-income country<sup>5</sup>. Compounding the scarcity of treatment studies from LMIC, almost all trials assessed pharmacological strategies. The lack of evidence of the efficacy of psychosocial or combined interventions (“packages of care”), and the total absence of effectiveness trials, is a key barrier to scaling up of packages of care for child mental disorders as these require substantial degrees of contextual adaptation, not least to address the other barriers discussed below<sup>5</sup>.

The second barrier is the identification of those in need – even in high-income countries less than a quarter of children with mental disorders are identified<sup>10</sup>. The currently available diagnostic categories for mental disorders have limited application to young children – mostly due to a failure to recognize developmental vicissitudes in the presentation of symptoms (e.g., a depressed child will be less likely to verbalize mood symptoms in comparison to older adolescents or adults). Importantly, there are critical evidence gaps in our knowledge about the diagnostic validity of some of the categories of child mental disorders (in particular the emotional and behavioural disorders) which are likely to be profoundly influenced by contextual factors (such as the degree and perception of impairments produced by the condition) as demonstrated in qualitative research from LMIC<sup>11, 12</sup>. Furthermore, a recent cross-national analyses of eight population based studies from LMIC revealed a eight fold variation in the prevalence of child mental disorder rates and observed that a weak relationship between caseness defined on the basis of a screening questionnaire and the variation in disorder rates indicating the limitations of using such questionnaires as proxies for diagnosis of child mental disorders in the cross-cultural context<sup>13</sup>. Although structured and semi-structured interviews such as the DAWBA (Development and Well-Being Assessment) do exist in multiple languages, allowing for

formal categorical diagnoses according to ICD and DSM criteria, their use in routine care is unlikely to be feasible.

Perhaps the most challenging barrier of all, though, is the great shortage of skilled human resources to address child mental disorders in most regions of the world. Child mental health resources are very inequitably distributed globally with over 95% of specialized human resources concentrated in high-income countries. As one stark reminder of this inequity, there are fewer child psychiatrists in the whole of Africa than in the state of California. There are few formal training programs for developmental and behavioural paediatrics, child psychiatry, speech and language therapy or other major disciplines concerned with child mental health in LMIC; in short, the massive shortage of specialised human resources is unlikely to be bridged in the foreseeable future. Thus, the approaches to the delivery of evidence based treatments for child mental disorders would need to take a very different strategy to the specialist led model adopted by well resourced countries. In particular, such strategies would need to adopt the principles of task-sharing, widely used in other areas of global health and in adult mental health, as a way of addressing human resource shortages<sup>14</sup>. Examples of alternative human resources who are more plentiful and could play a key role in the care of children with mental disorders including general paediatricians, general practitioners, community maternal and child mental health workers and school counsellors. Prescription of drugs could be done by either medically qualified personnel (such as paediatricians or general practitioners) or, where licensing permits, nurse practitioners. Efforts directed to scale up diagnostic and treatment strategies will inevitably need to address the issue of capacity building in these alternative human resources. Beyond the health sector, strategies including family, peers, and school staff constitute encouraging approaches; partnership and integration with other programs such as nutritional and antenatal care are also promising<sup>5</sup>. Countries such as Brazil have developed new modalities of services, emphasizing the importance of multidisciplinary collaboration within and between the health sector and the educational and justice systems<sup>15</sup>.

## Improving access to care for ChMD

In the final section of the paper we review the evidence base on strategies to improve access to evidence based care for children with mental disorders in LMIC. The age-group of children under the age of nine years encompasses distinct, if overlapping, developmental phases which are associated with different types of mental disorders and different strategies for improving access to interventions.

### Identification of ChMD

The need for screening for developmental disorders and increasing public awareness about screening has been identified in countries like India and Pakistan as a key community based strategy to improve access to care<sup>16, 17</sup>. A key element in the care of children with developmental disorders is early identification. Two approaches may be considered. The first involves the use of key informants in the community, a strategy which has been shown to be an effective low-cost method for identifying children with visual impairment, hearing impairment, physical impairment and epilepsy<sup>18</sup>; the suitability of this approach for neuro-developmental disabilities remains to be ascertained. The second approach involves the use of screening questionnaires. The Ten Questions is a commonly used tool that has been used by community health workers in LMIC to identify children with developmental disorders; when followed up with a second assessment by health professionals, this procedure can greatly enhance the accurate identification of children with such disorders, which in turn can lead to more appropriate interventions<sup>19</sup>. Another recently developed tool is the 39 item Neurodevelopmental Disorders Screening Tool (NDST) developed by INCLIN; the NDST is designed to be a first stage community-based screening tool for ten neuro-developmental

disabilities to be used by community health workers and has recently completed clinical and field validation studies<sup>20</sup>. Similarly, there have been considerable advances in the development of brief measures of childhood psychopathology, notably scales such as the Strengths and Difficulties Questionnaire (translated into more than 75 languages and freely available at [www.sdqinfo.com](http://www.sdqinfo.com)) and the Achenbach System of Empirically Based Assessment (translated into more than 80 languages and commercially available at [www.aseba.org](http://www.aseba.org)). Such screening tools can be very useful for detection of probable mental disorders and provision of first-level care and advice regarding appropriate referrals for further assessment.

### Community based strategies

There is a small literature supporting the use of community-based intervention in some settings. In one such study, community based rehabilitation models using a distance training package was used in Bangladesh to train mothers with children with cerebral palsy. This randomized trial led to increased adaptive skills in the children and better knowledge about managing the problems amongst the mothers<sup>21</sup>. In addition it also taught health professionals about the need for making services more accessible to the primary care-givers – mothers and guardians – who often are unable to attend health clinics due to shortage of time, long distances and cost implications consequent to long-term engagement, and benefit from home-based care facilities and distance training. With the increasing coverage and lower costs of mobile phones, such distance training models of care have a immense potential of becoming a key component of child mental health care delivery in remote areas. In optimal circumstances, community-based care needs to be co-ordinated with school based and clinic based services. Though parenting programs have been shown to be useful in managing emotional and behavioural disorders in children in high income countries, a recent review found little research that had a focus on LMIC<sup>22</sup>.

### School based strategies

School-based policies and programs coupled with increased awareness amongst parents and collaborative support and referral pathways from trained mental health personnel where available are key strategies for addressing child mental disorders<sup>23</sup>. Health Promoting Schools is a concept that evolved out of World Health Organization's Global School Health Initiative in 1995, and incorporates school-based services within a larger framework of community-based services and policies, while at the same time increasing awareness about different health problems including mental health problems that affect school-going children ([http://www.who.int/school\\_youth\\_health/gshi/en/index.html](http://www.who.int/school_youth_health/gshi/en/index.html)). This concept has been implemented in a number of LMIC. For example, the Latin American Network of Health Promoting Schools and a Caribbean Network of Health Promoting Schools have been set up to help take the initiative forward in those regions and have specifically focussed on schools as centres for identifying mental disorders and promoting healthy lifestyles while actively involving the family and community ([http://www.paho.org/English/AD/SDE/HS/HPS\\_PlanActionNo4.pdf](http://www.paho.org/English/AD/SDE/HS/HPS_PlanActionNo4.pdf)). The World Health Organization (2003) has also developed metrics that schools can use to develop effective school environments for health promotion amongst its students<sup>24</sup>.

In a study across nine countries (predominantly LMIC), it was found that providing adequate knowledge about mental health problems to parents, teachers and students resulted in improved awareness about and detection of mental disorders in school children<sup>25</sup>. The provision of mental health care after identification poses another challenge. A recent cluster trial in pre-schools in Jamaica described the benefits of a low-cost, school-based intervention, delivered by teachers, on reducing child conduct problems and increasing child social skills at home and at school<sup>26</sup>. However teachers, particularly in primary and



secondary schools, are already hard-pressed with their routine responsibilities to take on yet another task. An alternative is using available and affordable human resources with appropriate training and supervision to deliver care. A cluster trial from Nepal described the benefits of a counsellor led school based intervention on social-behavioural and resilience indicators in children exposed to armed conflict in Nepal<sup>27</sup> while another non-controlled study has described the acceptability, feasibility and impact of a lay school counsellor led Health Promoting Schools program in schools in India<sup>28</sup>. While both these studies targeted older children and adolescents, their use of low cost additional human resources may have important implications for addressing mental health problems in younger children.

### Clinical mental health care strategies

Besides home- and school-based services, a number of children with mental disorders need interventions from suitably trained health professionals. In view of the great shortage of specialized professionals in LMIC, it is important to integrate child mental health services within other health services specific for children's needs. In our view, the best placed health care professional in LMIC to address child mental disorders is the paediatrician, a cadre which is not only more available than the more specialized child mental health professionals, but also which is typically the first point of contact for child health problems for most parents in LMIC. Another key practitioner is the family or primary care physician or nurse who may be the only medical practitioner in many settings. However, they need to be supported, wherever possible, by specialized professionals (such as child psychiatrists) and social services personnel<sup>29</sup>. However we were unable to identify any evaluations of such collaborative approaches to improving addressing child mental disorders in LMIC. Marginalized children who live on the streets or are victims of physical and sexual abuse, or are addicted to alcohol and drug use, need more intensive support from mental health professionals and community support systems. While there are few documented programs from LMIC, an example of note is the Equilibrium Project in Sao Paulo, Brazil, which has successfully progressed from a research project to a community-based integrated approach of care for street children, and uses a stepwise method of care catered to the specific needs of the child<sup>30</sup>.

### Conclusion

Despite the evidence base on the burden of child mental disorders and their long-term consequences, and the recent mhGAP guidelines which testify to the effectiveness of a range of pharmacological and psychosocial interventions for these disorders, the vast majority of children do not have access to these interventions. Some barriers to access are common across both high income countries and LMIC – cost, inconvenience of access, poorly integrated systems of care, and inadequate insurance coverage<sup>31</sup>. Moreover, poorly trained health professionals with inadequate knowledge about child mental disorders and paucity of appropriate specialist referral services are a barrier to appropriate clinical care<sup>32</sup>. Ultimately, the vision of an integrated child mental health care system that incorporates context-sensitive assessment of child mental health, offers evidence based pharmaceutical and psychosocial interventions in a collaborative framework of task-sharing with general and community health care providers working in diverse settings and supported by available specialists, and invests in appropriate research, remains a very distant goal for most children in most parts of our world today. It is not surprising that research which aims to improve access to care for child mental disorders emerged as one of the leading Grand Challenges in Global Mental Health<sup>33</sup>. In the meantime, though, perhaps the most viable strategy to address the treatment gap is through empowerment of existing human resources who are most intimately concerned with child care, including parents, through innovative

technologies such as mobile health, with the necessary skills for the detection and treatment of child mental disorders.

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**Table 1**  
**The mhGAP guidelines for child mental disorders for use by non-specialist health workers**

| Developmental Disorders                                                                                                                                                       | Recommendations + Positive /– Negative                                                                                                                                       | Strength |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Intellectual Disability assessment                                                                                                                                            | + Further assessment when a delay in development is suspected, using locally validated questionnaires                                                                        | Standard |
|                                                                                                                                                                               | +if adequately supervised a clinical assessment or referral for diagnosis when a child is suspected with a delay in development                                              | Standard |
|                                                                                                                                                                               | + if locally validated tools are available, consider monitoring child development                                                                                            | Standard |
| Management                                                                                                                                                                    | + Collaborative care or referral to community based rehabilitation programs (however quality of evidence was very low)                                                       | Standard |
|                                                                                                                                                                               | + Parent Skills training can be considered in the management of children with ID and PDD (however few studies from LMIC were available and the quality of evidence was low)* | Standard |
| * The evidence base identified an increasing amount of literature from high-income countries on manualised parenting skills training programs, which could be adapted for use |                                                                                                                                                                              |          |

| Behavioural Disorders                                                               | Recommendations + Positive /– Negative                                                                                              | Strength |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------|
| Management of ADHD                                                                  | + Initial parent skills training using cognitive behavioural therapy and social skills training prior to commencing medication      | Standard |
|                                                                                     | +Methylphenidate should be considered preferably after consultation with a specialist. Close monitoring of the individual suggested | Standard |
| Management of DBD*, CD**, ODD***, and comorbid ADHD                                 | – Treatment with any pharmacological agent (methylphenidate, lithium, carbamazepine and risperidone)                                | Strong   |
| *Disruptive Behaviour Disorder **Conduct Disorder *** Oppositional Defiant Disorder |                                                                                                                                     |          |

| Depression | Recommendations + Positive /– Negative                                                      | Strength |
|------------|---------------------------------------------------------------------------------------------|----------|
| Management | – Pharmacological interventions to treat somatoform disorders                               | Standard |
|            | + Cognitive behavioural therapy should be considered with adequate training and supervision | Standard |
|            | –Treatment of children in the age group 6-12 years with tricyclic antidepressants           | Strong   |
|            | +Fluoxetine for adolescents with Depression                                                 | Standard |